

# DEPARTMENT OF ENVIRONMENTAL CONSERVATION

## AIR QUALITY CONSTRUCTION PERMIT

Permit No. 0073-AC061  
Application No. X083

Final - Issue Date: February 21, 2001

The Department of Environmental Conservation, under the authority of AS 46.14 and 18 AAC 50, issues a construction permit to the Permittee, **BP Exploration (Alaska), Inc.**, for the **Pt. McIntyre Enhanced Oil Recovery Project** at the **Lisburne Production Center**.

This permit satisfies the obligation of the owner and operator to obtain a construction permit as set out in AS 46.14.130(a).

As required by AS 46.14.120(c), the Permittee shall comply with the terms and conditions of this construction permit.

As set out in 18 AAC 50.340(i), this construction permit revises terms and conditions of Air Quality Control Permit to Operate No. 9473-AA025, as amended and revised through January 13, 1997.

[18 AAC 50.320(b), 1/18/97]

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John F. Kuterbach, Manager  
Air Permits Program

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Date

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**List of Abbreviations Used in this Permit**

AAC .....	Alaska Administrative Code
ADEC .....	Alaska Department of Environmental Conservation
AS.....	Alaska Statutes
ASTM.....	American Society of Testing and Materials
C.F.R. ....	Code of Federal Regulations
COMS .....	Continuous Opacity Monitoring System
dscf.....	Dry standard cubic feet
EPA.....	US Environmental Protection Agency
gr/dscf.....	grain per dry standard cubic feet (1 pound = 7000 grains)
GPH.....	gallons per hour
HAPS.....	Hazardous Air Pollutants [hazardous air contaminants as defined in AS 46.14.990(14)]
ID.....	Source Identification Number
MACT .....	Maximum Achievable Control Technology
Mlb .....	thousand pounds
NESHAPs.....	Federal National Emission Standards for Hazardous Air Pollutants [as defined in 40 C.F.R. 61]
NSPS.....	Federal New Source Performance Standards [as defined in 40 C.F.R. 60]
PPM.....	Parts per million
PS .....	Performance specification
PSD .....	Prevention of Significant Deterioration
RM.....	Reference Method
SIC.....	Standard Industrial Classification
SO <sub>2</sub> .....	Sulfur dioxide
TPH.....	Tons per hour
TPY .....	Tons per year
VOC .....	volatile organic compound [as defined in 18 AAC 50.990(103)]
Wt%.....	weight percent

**Section 1. Identification**

## Names and Addresses

Permittee: **BP Exploration (Alaska), Inc.**  
900 East Benson Blvd., P.O. Box 196612  
Anchorage, Alaska 99519-6612

Facility: **Lisburne Production Center**

Location: Section 19, Township 11N, Range 15E, Umiat Meridian

Physical Address: Prudhoe Bay, Alaska  
UTM Zone 6, 445950 E, 7798600 N

Owner: BP Exploration (Alaska), Inc.  
Phillips Alaska, Inc.  
Exxon Company, USA

Operator: BP Exploration (Alaska), Inc.  
900 East Benson Blvd., P.O. Box 196612  
Anchorage, Alaska 99519-6612

Permittee's Responsible Official: Bill Johnson, BP Exploration (Alaska), Inc.

Designated Agent: CT Corporation  
801 West 10th Street, Suite 300  
Juneau, Alaska 99801

Facility and Building Contact: Thomas Barnes and Bruce Robinson  
Lisburne Production Center  
Prudhoe Bay, Alaska  
(907) 659-8640

Fee Contact: Jim Short, BP Exploration (Alaska), Inc.  
900 East Benson Blvd., P.O. Box 196612  
Anchorage, Alaska 99519-6612

SIC Code of the Facility: Crude Petroleum and Natural Gas Production; SIC Code 1311

NAICS Code: 211111

[18 AAC 50.320(a), 1/18/97]

Issued: February 21, 2001

**Section 2.    *Permit Continuity***

1.    Except as revised or rescinded herein or as superseded by an Air Quality Permit issued under AS 46.14.170, the Permittee shall comply with terms and conditions of Air Quality Control Permit to Operate No. 9473-AA025, as amended and revised through January 13, 1997.
2.    If permit terms and conditions listed in this permit conflict with those of Permit No. 9473-AA025, the Permittee shall comply with terms and conditions listed herein.

**Section 3. Emission Information and Classification**

Emissions of Regulated Air Contaminants, as provided in Permittee's application:

- a. Nitrogen Oxides (NO<sub>x</sub>), Particulate Matter (PM<sub>10</sub>), Sulfur Dioxide (SO<sub>2</sub>), Carbon Monoxide (CO), and Volatile Organic Compounds (VOC).

Construction Permit Classifications:

- a. The Enhanced Oil Recovery Project requires construction permit provisions requested by the owner or operator under 18 AAC 50.305(a)(3) and (a)(4).

Facility Classifications as described under 18 AAC 50.300(b) through (g), modifications as described under 18 AAC 50.300(h), or owner requested limit classification under 305(a)(1) through (4):

- a. The facility is classified as Prevention of Significant Deterioration (PSD) Major under 18 AAC 50.300(c)(1) as it contains sources with the potential to emit greater than 250 tons per year of NO<sub>x</sub>, PM<sub>10</sub>, and SO<sub>2</sub>.
- b. The Permittee has requested limits to avoid the project's classification as a PSD significant modification under 18 AAC 50.300(h)(3) as provided by 18 AAC 50.305(a)(4).

[18 AAC 50.320(a)(2), 1/18/97]

#### **Section 4. Source Inventory and Description**

Sources listed below have specific monitoring, record keeping, or reporting conditions in this construction permit. Source descriptions and ratings are given for identification purposes only. The total facility equipment inventory can be seen in Permit No. 9473-AA025, as amended and revised through January 13, 1997.

**Table 1: Source Inventory**

<b>ID</b>	<b>Source Name</b>	<b>Source Description</b>	<b>Fuel</b>	<b>Rating/Size</b>
4	52-1807 Gas Turbine	GE 5382C Gas Injection Turbine	Natural Gas	38,000 hp
5	52-1808 Gas Turbine	GE 5382C Gas Injection Turbine	Natural Gas	38,000 hp
6	42-0101 Gas Turbine	Solar Mars Turbine Generator Set	Natural Gas/ Diesel	12,000 hp
7	42-0102 Gas Turbine	Solar Mars Turbine Generator Set	Natural Gas/ Diesel	12,000 hp
8	42-0103 Gas Turbine	Solar Mars Turbine Generator Set	Natural Gas/ Diesel	12,000 hp
9	42-0114 Gas Turbine	Solar Mars Turbine Generator Set	Natural Gas/ Diesel	12,000 hp
21	LPC-EDE1 Emergency Generator	GM EMD 29F4B Generator	Diesel	4,000 hp
22	LPC-EDE2 Firewater Pump	Caterpillar 3306T Firewater Pump	Diesel	213 hp
23	LPC-EDE3 Firewater Pump	Caterpillar 3306T Firewater Pump	Diesel	213 hp

**Section 5. Ambient Air Quality Standards and Maximum Allowable Ambient Concentrations**

3. **General Description.** This permit contains terms and conditions to ensure that allowable emissions from the facility and associated growth will not cause an ambient concentration that exceeds the concentrations established in Table 6 of 18 AAC 50.310(d)(2) at any location that does not or would not meet the ambient air quality standard or maximum allowable ambient concentration.
4. **Authorization and Notification Requirements.** The Permittee shall modify and operate the facility in accordance with the construction permit application and application supplements listed in Section 17, as may be currently applicable. This permit authorizes the Permittee to replace standard combustor liners in two GE Turbines, Sources ID No. 4 and 5, with lean head end combustor liner technology, and then to increase the load on four Solar Turbines, Source ID No. 6 through 9.

Notwithstanding the regulations set forth in 18 AAC 50.300(h), the Permittee shall notify the Department, in accordance with the following condition, prior to:

- 4.1 installing a permanent stationary emission unit at the facility that is not listed in Exhibit A of Permit to Operate No. 9473-AA025; or
- 4.2 making a physical or operational change to a source listed in Exhibit A of Permit to Operate No. 9473-AA025 that would cause the design rating, capacity, or throughput to deviate from the description provided in Exhibit A of Permit to Operate No. 9473-AA025 or this construction permit.
5. **Sulfur Dioxide Requirements.** The Permittee shall comply with the following requirements to protect ambient air:
- 5.1 The hydrogen sulfide content of natural gas burned in all gas-fired stationary sources shall not exceed 168 ppmv averaged over three consecutive hours.
- a. Monitor, record, and report as set out in Permit No. 9473-AA025; and
- 5.2 The sulfur content of fuel oil burned in all fuel oil-fired stationary sources at the Lisburne Production Center and Drill Sites 1-5 and Point McIntyre shall not exceed 0.15 percent by weight at any time.
- a. Monitor, record, and report as set out in Permit No. 9473-AA025.
- 5.3 Burn fuel oil in Sources ID No. 6 through 9 no greater than a combined total of 4 hours per day and a combined total of 800 hours per 12-month rolling period.
- a. Monitor and record the cumulative total hours per day and hours per month during which the units burn fuel oil.



- b. Report the combined total daily and 12-month rolling total hours of operation burning fuel oil in the operating report required by Condition 34.
- 5.4 Burn fuel oil in Source ID No. 21 no greater than 8 hours per day, non-emergency use. An emergency is defined as a process upset.
  - a. Monitor and record the hours per day during which the unit burns fuel oil.
  - b. Report the daily hours of operation burning fuel oil in the operating report required by Condition 34.
- 5.5 Burn fuel oil in Sources ID No. 22 and 23 no greater than a combined total of 6 hours per day, non-emergency use. An emergency is defined as a process upset.
  - a. Monitor and record the cumulative total hours per day during which the units burn fuel oil.
  - b. Report the combined total daily hours of operation burning fuel oil in the operating report required by Condition 34.
- 6. **Stack Height Requirements.** All Lisburne Production Center emission sources, except for the flare, shall have vertical exhaust outlets with no raincaps.

[18 AAC 50.320(a)(2), 1/18/97]

**Section 6. Owner Requested Limits to Avoid Classification as a PSD Major Modification**

- 7. Nitrogen Oxides Requirements.** The Permittee shall avoid classification as a Prevention of Significant Deterioration major modification under 18 AAC 50.300(h)(3)(B)(ii) for NO<sub>x</sub> as follows:

- 7.1 After installing Lean Head End combustor technology on both of Sources ID No. 4 and 5:
- a. The NO<sub>x</sub> emission concentration from Sources ID Nos. 4 and 5 shall not exceed 79 ppmvd at 15% O<sub>2</sub> and corrected to ISO standard conditions;
  - b. The annual fuel consumption for Sources ID Nos. 6 through 9 shall not exceed a combined total of 3,272 MMscf per 12-month rolling period; and
  - c. The cumulative total NO<sub>x</sub> emission limit for Sources ID No. 4 through 9 shall not exceed 1,808 tons per 12-month rolling period, expressed as NO<sub>2</sub>.
- 7.2 After installing Lean Head End combustor technology on both of Sources ID No. 4 and 5, the Permittee shall monitor compliance with Condition 7.1 as follows:
- a. Source Testing Requirement:
    - (i) Within 60 days after achieving the maximum production rate at which the adjusted Sources ID No. 4 and 5 will be operated, but no later than 180 days after initial startup of the last of the adjusted units, conduct a NO<sub>x</sub> emission source test on:
      - (a) One of Sources ID No. 4 and 5 burning gas fuel at three loads in the operating range of the unit, including the minimum and maximum burning or operating capacity of the units.
      - (b) Two of Sources ID No. 6 through 9 burning gas fuel at four loads in the operating range of the unit, including the minimum and maximum burning or operating capacity of the unit.
    - (ii) Within 120 days after burning fuel oil greater than a combined total of 400 hours per 12-month rolling period in Sources ID Nos. 6 through 9, conduct a NO<sub>x</sub> emission source test on:
      - (a) One of Sources ID Nos. 6 through 9 burning fuel oil at the maximum anticipated steady load of the unit based on the past two years of normal operation.

- (iii) Source test in accordance with the monitoring, recording, and reporting requirements set forth in Section 11.
- (iv) For each test, determine the fuel specific NO<sub>x</sub> emission factors (lb/MMBtu) using exhaust properties determined by both Method 19 and exhaust gas measurements as set out in Section 11. Monitor and record the fuel consumption during each test. Use consistent heating values (higher heating value or lower heating value) throughout the analysis. If the “F” factor in Table 19-2 of Method 19 is used in the calculations, the higher heating value must be used in all calculations.
- (v) Within 45 days of the source test conducted in Condition 7.2a(i), calculate and record the potential to emit from Sources ID Nos. 4 through 9. Use the worst-case emission factor at worst case operations for each turbine group based on results of the source tests. For gas fuel consumption in Sources ID No. 6 through 9, use a fuel consumption limit as indicated in Condition 7.1b or use the maximum theoretical fuel consumption at that load for continuous year round operation. If fuel oil consumption is used in the calculation, use an AP-42 emission factor of 0.67 lb/MMBtu based on the higher heating value of the fuel and a fuel oil operational limit for Sources ID No. 6 through 9 as indicated in Condition 5.3.

b. Monitoring and Recording Requirements:

- (i) Monitor and record the monthly average ambient temperature, hours of operation, fuel oil and gas consumption for each of Sources ID No. 4 through 9.
- (ii) If the potential to emit NO<sub>x</sub> as determined in Condition 7.2a(v) is greater than 1,808 tons per 12-month rolling period, calculate and record the cumulative monthly and 12-month rolling total NO<sub>x</sub> emission rates from the two turbines groups, Sources ID No. 4 and 5 and Sources ID No. 6 through 9, using:
  - (a) The monthly fuel gas consumption and corresponding worst-case fuel specific emission factor of the turbine group for a given load range determined from results of the source tests; and
  - (b) The monthly fuel oil consumption and either (1) an AP-42 emission factor of 0.67 lb/MMBtu based on the higher heating value of the fuel, or (2) if subject to Condition 7.2a(ii), a Department approved emission factor determined from results of the source test.

7.3 After installing Lean Head End combustor technology on both of Sources ID No. 4 and 5, the Permittee shall report compliance with Condition 7.1 as follows:

- a. Attach to the Operating Report required under Condition 34 of this permit, the cumulative total monthly and 12-month rolling total NO<sub>x</sub> emission rates from Sources ID No. 4 through 9 if subject to Condition 7.2b(ii). If the duration of the emission unit's operations has not yet approached 12 months, list the cumulative emissions of the unit as a substitute for compliance with the 12-month rolling total emission limit.
- b. The Permittee is exempt from reporting NO<sub>x</sub> emissions in Condition 7.3a prior to submission of source test results. Within 45 days after the source tests, submit to the Department either:
  - (i) A demonstration showing that the potential to emit NO<sub>x</sub> as calculated in Condition 7.2a(v) is less than 1,808 tons per 12-month rolling period; or
  - (ii) A calculation of the monthly and 12-month rolling total NO<sub>x</sub> emissions for Sources ID No. 4 through 9 as determined by Condition 7.2b(ii) from the time of installation of lean head end liners on the second of Sources ID No. 4 and 5.

**8. Carbon Monoxide Requirements.** The Permittee shall avoid classification as a Prevention of Significant Deterioration major modification under 18 AAC 50.300(h)(3)(B)(i) for CO as follows:

**8.1** After installing Lean Head End combustor technology on both of Sources ID No. 4 and 5:

- a. CO emissions for Sources ID No. 4 through 9 shall not exceed a cumulative total of 366 tons per 12-month rolling total.

**8.2** After installing Lean Head End combustor technology on both of Sources ID No. 4 and 5, the Permittee shall monitor compliance with Condition 7.1 as follows:

- a. Source Testing Requirement:
  - (i) Within 60 days after achieving the maximum production rate at which the adjusted Sources ID No. 4 and 5 will be operated, but no later than 180 days after initial startup of the last of the adjusted units, conduct a CO emission source test on:
    - (a) One of Sources ID No. 4 and 5 burning gas fuel at three loads in the operating range of the unit, including the minimum and maximum burning or operating capacity of the units.
    - (b) Two of Sources ID No. 6 through 9 burning gas fuel at four loads in the operating range of the unit, including the minimum and maximum burning or operating capacity of the unit.

- (ii) Within 120 days after burning fuel oil greater than a combined total of 400 hours per 12-month rolling period in Sources ID Nos. 6 through 9, conduct a CO emission source test on:
    - (a) One of Sources ID Nos. 6 through 9 burning fuel oil at the lowest anticipated steady load based on the past two years of normal operation of the unit.
  - (iii) Source test in accordance with the monitoring, recording, and reporting requirements set forth in Section 11.
  - (iv) For each test, determine the fuel specific CO emission factors (lb/MMscf or lb/gal) using exhaust properties determined by both Method 19 and exhaust gas measurements as set out in Section 11. Monitor and record the fuel consumption during each test. Use consistent heating values (higher heating value or lower heating value) throughout the analysis. If the “F” factor from Table 19-2 in Method 19 is used in the calculations, the higher heating value should be used in all calculations.
  - (v) Within 45 days of the source test conducted in Condition 8.2a(i), calculate and record the potential to emit from Sources ID Nos. 4 through 9. Use the worst-case emission factor at worst case operations for each turbine group based on results of the source tests. For gas fuel consumption in Sources ID No. 6 through 9, use a fuel consumption limit as indicated in Condition 7.1b or use the maximum theoretical fuel consumption at that load for continuous year round operation. If fuel oil consumption is used in the calculation, use an AP-42 emission factor of 0.014 lb/MMBtu based on the higher heat value of the fuel and a fuel oil operational limit for Sources ID No. 6 through 9 as indicated in Condition 5.3.
- b. Monitoring and Recording Requirements:
- (i) Monitor and record the monthly average ambient temperature, hours of operation, fuel oil and gas consumption for each of Sources ID No. 4 through 9. If subject to Condition 8.2b(iii), then monitor and record the average ambient temperature, hours of operation, fuel oil and gas consumption for each of Sources ID No. 4 through 9 on a daily basis.
  - (ii) If the potential to emit CO as determined in Condition 8.2a(v) is greater than 366 tons per 12-month rolling period, calculate and record the cumulative monthly and 12-month rolling total CO emission rates from the two turbines groups, Sources ID No. 4 and 5 and Sources ID No. 6 through 9, using:

- (a) The monthly fuel gas consumption and corresponding worst-case fuel specific emission factor of the turbine group for a given load range determined from results of the source tests; and
- (b) The monthly fuel oil consumption and either (1) an AP-42 emission factor of 0.014 lb/MMBtu based on the higher heating value of the fuel, or (2) if subject to Condition 8.2b(ii), a Department approved emission factor determined from results of the source test.
- (iii) If the potential to emit CO as determined in Condition 8.2a(v) is greater than 366 tons per 12-month rolling period and the cumulative 12-month rolling total CO emission rate for Sources 4 through 9 as calculated in Condition 8.2b(ii) is greater than 329 tons per 12-month rolling period, then refine the calculations in Conditions 8.2b(i) and 8.2b(ii) for Sources 6 through 9 to a daily basis.

8.3 After installing Lean Head End combustor technology on both of Sources ID No. 4 and 5, the Permittee shall report compliance with Condition 8.1 as follows:

- a. Attach to the Operating Report required under Condition 34 of this permit, the cumulative total monthly and 12-month rolling total CO emission rates from Sources ID No. 4 through 9 if subject to Conditions 8.2b(ii) or 8.2b(iii). If the duration of the emission unit's operations has not yet approached 12 months, list the cumulative emissions of the unit as a substitute for compliance with the 12-month rolling total emission limit.
- b. The Permittee is exempt from reporting CO emissions in Condition 8.3a prior to submission of source test results. Within 45 days after the source tests, submit to the Department either:
  - (i) A demonstration showing that the potential to emit CO as calculated in Condition 8.2a(v) is less than 366 tons per 12-month rolling period; or
  - (ii) A calculation of the monthly and 12-month rolling total CO emissions for Sources ID No. 4 through 9 as determined by Conditions 8.2b(ii) or 8.2b(iii) from the time of installation of lean head end liners on the second of Sources ID No. 4 and 5.

[18 AAC 50.320(a)(2), 1/18/97]

**Section 7. Best Available Control Technology**

Subject to Turbine Sources ID No. 1 through 9

The Permittee shall comply with best available control technology limits and the monitoring, recording, and reporting requirements for Source ID No. 1 through 9 as set out in Permit No. 9473-AA025, except as revised below:

- 9. Nitrogen Dioxide Requirements.** After installing Lean Head End combustor technology on both of Sources ID No. 4 and 5, the NO<sub>x</sub> best available control technology limits for the turbines are revised to replace the ton per year limits with language as set out in Conditions 9.1 and 9.2.
  - 9.1 The cumulative total NO<sub>x</sub> emission limit for Sources ID No. 4 and 5 shall not exceed 1,063 tons per 12-month rolling period; and
  - 9.2 The cumulative total NO<sub>x</sub> emission limit for Sources ID No. 6 through 9 shall not exceed 745 tons per 12-month rolling period.
  - 9.3 Monitor and record as set out in Condition 7. Report in the Facility Operating Report required by Condition 34, the cumulative monthly and 12-month rolling total NO<sub>x</sub> emission rates from the two turbines groups, Sources ID No. 4 and 5 and Sources ID No. 6 through 9 as calculated in Condition 7.2b(ii).
- 10. Sulfur Dioxide Requirements.** After installation of Lean Head End combustor technology on both of Sources ID No. 4 and 5, the SO<sub>2</sub> best available control technology monitoring, recording, and reporting requirements to show compliance with the ton per year limit are revised as set out in Conditions 10.2 and 10.3.
  - 10.1 The cumulative total SO<sub>2</sub> emission limit for Sources ID No. 1 through 9 shall not exceed 157 tons per 12-month rolling period as set out in Permit No. 9473-AA025;
  - 10.2 Calculate and record the monthly and 12-month rolling total SO<sub>2</sub> emissions using a mass balance equation with the quantities of each fuel burned and the hydrogen sulfide content of fuel gas or sulfur content of fuel oil as measured in Conditions 5.1a and 5.2a
  - 10.3 Attach to the Operating Report required by Condition 34, the monthly and 12-month rolling total SO<sub>2</sub> emissions from Sources ID No. 1 through 9.

[18 AAC 50.320(a)(2), 1/18/97]

**Section 8. Federal New Source Performance Standards**

Subject to Turbine Sources ID No. 4 through 9

The Permittee shall comply with the requirements of 40 C.F.R. 60, New Source Performance Standards (NSPS) as they apply to affected facilities. Notify and report as set out below and as specified in Condition 33.

- 11. Good Air Pollution Control Practice.** At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain, and operate Sources ID No. 4 through 9 including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the department that may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance records, and inspections of Sources ID No. 4 through 9.

{18 AAC 50.040(a)(1), 1/18/97}  
[18 AAC 50.320(a)(2)(A-E), 1/18/97]

- 12. 40 C.F.R. 60, Subpart A, General Provisions:** In accordance with 40 C.F.R. 60, Subpart A, 40 C.F.R. 61, Subpart A, and 18 AAC 50.040, for each construction, modification, or reconstruction of affected facilities and sources regulated under 40 C.F.R. 60 and 61:

12.1 Notify the Department and EPA:

- a. No later than 30 days after construction or reconstruction commencement in accordance with 40 C.F.R. 60.7(a)(1);
- b. No more than 15 days after start-up in accordance with 40 C.F.R. 60.7(a)(3);
- c. 60 days prior or as soon as practicable before modifying facilities that would be subject to NSPS as set out in 40 C.F.R. 60.7(a)(4);
- d. No less than 30 days prior to conducting a demonstration of continuous monitoring system performance as set out in 40 C.F.R. 60.7(a)(5);
- e. No less than 30 days prior to anticipated date for conducting opacity observations or using a continuous opacity monitoring system required by 60.11(e)(1), as set out in 40 C.F.R. 60.7(a)(6) and (7); and
- f. No less than 60 days prior to commencement of reconstruction or replacement of a facility, as defined in 40 C.F.R. 60, notify the Department and EPA with information as set out in 40 C.F.R. 60.14(d).



- 12.2 For affected facilities regulated under 40 C.F.R. 60, maintain records of occurrence and duration of start-up, shut-down, or malfunction of an affected facility, control equipment, or monitoring equipment as set out in 40 C.F.R. 60.7(b). Submit continuous monitoring system performance reports as set out in 40 C.F.R. 60.7(c) and (d). Maintain a file of measurements as set out in 40 C.F.R. 60.7(e).
- 12.3 For affected facilities regulated under 40 C.F.R. 60, within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up and at such other times as may be required by the EPA under Section 114 of the U.S. Clean Air Act, conduct performance tests as follows:
- a. Notify the Department and EPA at least 30 days in advance of any performance test and opacity observation as set out in 40 C.F.R. 60.8(d) and 60.11(e)(1);
  - b. Conduct performance tests and data reduction as set out in 40 C.F.R. 60.8(b) and (f);
  - c. Provide the Department copies of EPA administrator approvals for alternative performance testing;
  - d. Provide sampling ports and platform(s), safe access to platform(s), and utilities, and conduct testing as set out under 40 C.F.R. 60.8(c) and (e); and
  - e. Furnish the Department and EPA a copy of the performance test and opacity observations as set out in 40 C.F.R. 60.8(a) and 60.11(e)(2) through (5).
- 12.4 At all times, maintain, and operate each affected facility including pollution control equipment, as set out in 40 C.F.R. 60.11(d).
- 12.5 For the purpose of submitting compliance certifications or establishing whether or not the Permittee has violated or is in violation of any standard cited in this part, nothing in this part shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether the NSPS-affected sources would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed.
- 12.6 The Permittee is prohibited from concealing a violation of any applicable NSPS standard as set out in 40 C.F.R. 60.12.
- 12.7 For continuous monitoring systems and devices required under NSPS:
- a. Ensure all systems and devices are installed, calibrated, and operational as set out in 40 C.F.R. 60.13(b), prior to conducting a performance test under 40 C.F.R. 60.8;

- b. Conduct a performance evaluation of continuous emission monitoring systems (CEMS) or continuous opacity monitoring systems (COMS) as set out in 40 C.F.R. 60.13(c);
- c. Conduct daily zero and span checks of CEMS and COMS as set out in 40 C.F.R. 60.13(d);
- d. Ensure all continuous monitoring systems meet the minimum frequency of operation requirements set out in 40 C.F.R. 60.13(e), and are kept in continuous operation, except for system breakdowns, repairs, calibration checks, and zero/span adjustments;
- e. Install continuous monitoring systems to obtain representative emission or process parameters, as set out in 40 C.F.R. 60.13(f);
- f. Reduce continuous monitoring system data as set out in 40 C.F.R. 60.13(h); and
- g. Provide the Department a copy of each EPA alternative monitoring approval or relative accuracy test audit approval issued under 40 C.F.R. 60.13(i) or (j).

[18 AAC 50.320(a)(2)(A-E), 1/18/97]

{18 AAC 50.040(a)(1), 1/18/97}

### **13. 40 C.F.R. 60, Subpart GG, Stationary Gas Turbines:**

- 13.1 Applicability and designation of affected facilities, 40 C.F.R. 60.330. Affected units are all stationary gas turbines with a heat input at peak load equal to or greater than 10.7 gigajoules per hour (10 MMBtu per hour) based on the lower heating value as described in 40 C.F.R. 60.330(a) and (b) which commenced construction, modification, or reconstruction after October 3, 1977. Emergency fuel is defined in 40 C.F.R. 60.331(r) as fuel fired by a gas turbine only during circumstances such as natural gas supply curtailment or breakdown of delivery system, that make it impossible to fire natural gas in the gas turbine.
- 13.2 Standards for nitrogen oxides, 40 C.F.R. 60.332(a)(2) and (k), applicable to Source Nos. 4 through 9. Comply with the nitrogen oxides emission limit as listed in 40 C.F.R. 60.332(a)(2). The limit is  $STD = 0.015(14.4)/Y$ ; where STD is the allowable  $NO_x$  emissions (percent by volume) at 15 percent  $O_2$ , Y is the manufacturer's rated heat rate at manufacturer's peak load (kilojoules per watt-hour). Based on the manufacturer's heat rate of 12.5 kJ/W-hr, Sources ID No. 4 and 5 will have a limit of 173 ppmvd corrected for ISO conditions at 15%  $O_2$ . Based on the manufacturer's heat rate of 10.9 kJ/W-hr, Sources ID No. 6 through 9 will have a limit of 198 ppmvd corrected for ISO conditions at 15%  $O_2$ . Natural gas-fired turbines are exempt from 40 C.F.R. 60.332(a)(2) when firing emergency fuel, as described in 40 C.F.R. 60.331(r).

- 13.3 Standards for sulfur dioxide, 40 C.F.R. 60.333. Comply with the sulfur dioxide new source performance limitations listed in 40 C.F.R. 60.333(a) or (b) of 150 ppm exhaust concentration or 0.8 percent fuel sulfur content by weight, respectively. Comply with these requirements by burning natural gas in Sources ID No. 4 through 9 with a hydrogen sulfide content not to exceed 168 ppm averaged over 3 hours, and liquid fuel in Sources ID No. 6 through 9 with a sulfur content not to exceed 0.15 percent by weight, as set out in Condition 4.2.
- 13.4 Monitoring of operations, 40 C.F.R. 60.334. Except as provided for in an U.S. EPA waiver or custom monitoring schedule, comply with 40 C.F.R. 60.334(b) to monitor and record the sulfur content and nitrogen content of the fuel gas or liquid fuel. On October 18, 1993, EPA approved of a custom schedule for monthly monitoring of sulfur content and yearly reporting for fuel gas. On August 19, 1996, EPA-approved of a waiver of fuel-bound nitrogen monitoring for fuel gas. Include with reports submitted under 40 C.F.R. 60.7(c), information listed in 40 C.F.R. 60.334(c), (c)(2) and (c)(4). Keep a copy of all U.S. EPA issued custom monitoring schedules and waivers with the permit at the facility.
- 13.5 Test methods and Procedures, 40 C.F.R. 60.335, applicable to all affected facilities. Determine compliance with the nitrogen oxides and sulfur dioxide standards in 40 C.F.R. 60.332 and 60.333 as follows:
- Conduct performance tests as required in 40 C.F.R. 60.335(b) and (c), or alternative test methods in accordance with 40 C.F.R. 60.335(f);
  - Determine compliance with the sulfur content standard using methodology described in 40 C.F.R. 60.335(d), except as provided for in the October 2, 1997 U.S. EPA alternative monitoring plan with allows the use of ASTM D 4810-88 and D 4913-89 or GPA 2377-86;
  - The Permittee may propose an alternative to the reference methods in accordance with 40 C.F.R. 60.335(f)(1). Keep a copy of each U.S. EPA issued custom monitoring plan with the permit as the facility.

[18 AAC 50.320(a)(2)(A-E), 1/18/97]  
{18 AAC 50.040(a)(2)(V), 1/18/97}

**Section 9. State Emission Standards**

Subject to Sources ID No. 4 through 9 and 21 through 23

*Visible Emissions*

- 14.** The Permittee shall not cause or allow visible emissions, excluding condensed water vapor, emitted from Sources ID No. 4 through 9 and 21 through 23 to reduce visibility through the exhaust effluent by greater than 20% for more than three minutes in any one hour. For Sources ID No. 4 through 9, the Permittee will comply with this standard by meeting the 10% opacity BACT limit for PM<sub>10</sub> as set out in Permit to Operate No. 9473-AA025.

14.1 Monitor, record and report according to Section 14.

[18 AAC 50.055(a)(1), 1/18/97]  
[18 AAC 50.320(a)(2), 1/18/97]  
[18 AAC 50.320(a)(2)(A-E), 1/18/97]

*Particulate Matter*

- 15.** The Permittee shall not cause or allow particulate matter emitted from Source ID No. 4 through 9 and 21 through 23 to exceed 0.05 grains per cubic foot of exhaust gas corrected to standard conditions and averaged over three hours.

15.1 Monitor, record and report according to Section 14.

[18 AAC 50.055(b)(1), 1/18/97]  
[18 AAC 50.320(a)(2), 1/18/97]  
[18 AAC 50.320(a)(2)(A-E), 1/18/97]

*Sulfur Compound Emissions*

- 16.** The Permittee shall not cause or allow sulfur compound emissions, expressed as SO<sub>2</sub>, from Source ID No. 4 through 9 and 21 through 23 to exceed 500 PPM averaged over three hours.

16.1 Compliance with this condition is assured by using a grade of fuel that limits hydrogen sulfide (H<sub>2</sub>S) content to less than 168 ppmv averaged over three consecutive hours and sulfur (S) content to less than 0.15% by weight as set out in Condition 5.1 and 5.2.

16.2 Monitor, record, and report according to Permit No. 9473-AA025, amended as of January 13, 1997.

[18 AAC 50.055(c), 1/18/97]  
[18 AAC 50.320(a)(2), 1/18/97]  
[18 AAC 50.320(a)(2)(A-E), 1/18/97]

**Section 10. Generally Applicable Requirements**

- 17. Modification.** The Permittee shall not construct, operate, or modify a source that will result in a violation of the applicable emission standards or that will interfere with the attainment or maintenance of the ambient air quality standards or maximum allowable ambient concentrations.

[18 AAC 50.045(c), 1/18/97]  
[18 AAC 50.320(a)(2), 1/18/97]

- 17.1 Obtain all permits or permit revisions required for construction, modification, or operation under 18 AAC 50 and AS 46.14.

[18 AAC 50.320(a)(2), 1/18/97]

- 17.2 Comply with the conditions of all permits obtained under 18 AAC 50 and AS 46.14.

[18 AAC 50.320(a)(2), 1/18/97]

- 18. Air Pollution Prohibited.** The Permittee shall not cause any emission which is injurious to human health or welfare, animal or plant life, or property, or which would unreasonably interfere with the enjoyment of life or property.

[18 AAC 50.110, 5/26/72]  
[18 AAC 50.040(e), 1/18/97]  
[18 AAC 50.320(a)(2), 1/18/97]

- 18.1 Within 24 hours of receiving a complaint that is attributable to emissions from any of the sources listed in Table 1, investigate the complaint, and if warranted, initiate corrective actions to alleviate or eliminate the cause of the complaint.

[18 AAC 50.320(a)(2)(A-C), 1/18/97]

- 18.2 Keep records of the date, time, and nature of all complaints received, a summary of the investigation, and if applicable the corrective actions undertaken for complaints attributable to emissions from the sources listed in Table 1. Upon request of the department, submit copies of the records.

[18 AAC 50.320(a)(2)(D-E), 1/18/97]

- 19. Technology-Based Emission Standard.** If an unavoidable emergency, malfunction, or non-routine repair, as defined in 18 AAC 50.235, causes emissions in excess of a technology-based emission standard, the Permittee shall take all reasonable steps to minimize levels of emissions that exceed the standard.

[18 AAC 50.235(a), 1/18/97]  
[18 AAC 50.320(a)(2), 1/18/97]

**Section 11. General Source Testing and Monitoring Requirements**

- 20. Requested Source Tests.** In addition to any source testing explicitly required by this permit, the Permittee shall conduct source testing as requested by the department to determine compliance with applicable permit requirements.

[18 AAC 50.220(a), 1/18/97]

[18 AAC 50.345(a)(10), 1/18/97]

- 21. Operating Conditions.** Unless otherwise specified by an applicable requirement or test method, the Permittee shall conduct source testing

21.1 At a point or points that characterize the actual discharge into the ambient air; and

21.2 At the maximum rated burning or operating capacity of the source or another rate determined by the department to characterize the actual discharge into the ambient air.

[18 AAC 50.220(b) & (c), 1/18/97]

[18 AAC 50.320(a)(2)(A-C), 1/18/97]

- 22. Reference Test Methods.** The Permittee shall use the following as reference test methods when conducting source testing for compliance with this permit:

22.1 Source testing for compliance with requirements adopted by reference in 18 AAC 50.040(a) must be conducted in accordance with the methods and procedures specified in 40 C.F.R. 60.

[18 AAC 50.220(b) & (c), 1/18/97]

[18 AAC 50.320(a)(2)(A-C), 1/18/97]

22.2 Source testing for compliance with requirements adopted by reference in 18 AAC 50.040(b) must be conducted in accordance with the methods and procedures specified in 40 C.F.R. 61.

[18 AAC 50.220(b) & (c), 1/18/97]

[18 AAC 50.320(a)(2)(A-C), 1/18/97]

22.3 Source testing for compliance with requirements adopted by reference in 18 AAC 50.040(c) must be conducted in accordance with the source test methods and procedures specified in 40 C.F.R. 63.

[18 AAC 50.220(b) & (c), 1/18/97]

[18 AAC 50.320(a)(2)(A-C), 1/18/97]

22.4 Source testing for the reduction in visibility through the exhaust effluent must be conducted in accordance with the procedures set out in Section 15 of this permit. Visibility source testing is exempt from the requirements listed in Conditions 24 through 26. Except as otherwise directed by the Department, attach visible emission source testing results to the Facility Operating Report required by Condition 34 of this permit.

[18 AAC 50.220(b) & (c), 1/18/97]

[18 AAC 50.320(a)(2)(A-C), 1/18/97]

- 22.5 Source testing for emissions of particulate matter, sulfur compounds, nitrogen compounds, carbon monoxide, lead, volatile organic compounds, fluorides, sulfuric acid mist, municipal waste combustor organics, metals, and acid gases must be conducted in accordance with the methods and procedures specified 40 C.F.R. 60, Appendix A.

[18 AAC 50.220(b) & (c), 1/18/97]  
[18 AAC 50.320(a)(2)(A-C), 1/18/97]

- 22.6 Source testing for emissions of  $PM_{10}$  must be conducted in accordance with the procedures specified in 40 C.F.R. 51, Appendix M.

[18 AAC 50.220(b) & (c), 1/18/97]  
[18 AAC 50.320(a)(2)(A-C), 1/18/97]

- 22.7 Source testing for emissions of any contaminant may be determined using an alternative method approved by the department in accordance with Method 301 in Appendix A to 40 C.F.R. 63.

[18 AAC 50.220(b) & (c), 1/18/97]  
[18 AAC 50.320(a)(2)(A-C), 1/18/97]

- 23. Excess Air Requirements.** To determine compliance with this permit, standard exhaust gas volumes must only include the volume of gases formed from the theoretical combustion of fuel, plus the excess air volume normal for the specific source type, corrected to standard conditions (dry gas at 68° F and an absolute pressure of 760 millimeters of mercury).

[18 AAC 50.220(b) & (c), 1/18/97]  
[18 AAC 50.320(a)(2)(A-C), 1/18/97]  
[18 AAC 50.990(88), 1/18/97]

- 24. Test Plans.** Before conducting any source tests, the Permittee shall submit a plan to the Department. The plan must include the methods and procedures to be used for sampling, testing, and quality assurance, and must specify how the source will operate during the test and how the Permittee will document this operation. A complete plan must be submitted within 60 days of receiving a request under Condition 20 and at least 30 days before the scheduled date of any tests.

[18 AAC 50.345(a)(10), 1/18/97]  
[18 AAC 50.320(a)(2), 1/18/97]  
[18 AAC 50.320(a)(2)(A-C), 1/18/97]

- 25. Test Notification.** At least 10 days before conducting a source test, the Permittee shall give the Department written notice of the date and time the source test will begin.

[18 AAC 50.345(a)(10), 1/18/97]  
[18 AAC 50.320(a)(2), 1/18/97]  
[18 AAC 50.335(g), 1/18/97]

- 26. Test Reports.** Within 45 days after completing a source test, the Permittee shall submit two copies of the results, to the extent practical, in the format set out in the *Source Test Report Outline* of Volume III, Section IV.3, of the State Air Quality Control Plan, adopted by reference in 18 AAC 50.030(8). The Permittee shall certify the results as set out in Condition 28 of this permit.

[18 AAC 50.345(a)(10), 1/18/97]

[18 AAC 50.320(a)(2), 1/18/97]

[18 AAC 50.320(a)(2)(D), 1/18/97]

- 27. Continuous Monitoring Systems.** If required by terms and conditions of this permit, install, calibrate, conduct applicable continuous monitoring system performance specification tests listed in 40 C.F.R. 60, Appendix B, effective July 1, 1997, and certify test results; operate; and maintain air contaminant emissions and process monitoring equipment on the sources as described herein and in documents provided by the Permittee, listed in Section 17. Maintain records of monitoring equipment siting, operating, maintenance plans, and procedures.

[18 AAC 50.320(a)(2), 1/18/97]



## **Section 12. General Recordkeeping, Reporting, and Compliance Certification Requirements**

- 28. Certification.** The Permittee shall certify all reports, compliance certifications, or other documents submitted to the Department and required under this permit by including the signature of a responsible official for the permitted facility following the statement: “Based on information and belief formed after reasonable inquiry, I certify that the statements and information in and attached to this document are true, accurate, and complete.” For the same six-month reporting period, the excess emission reports submitted pursuant to Condition 32 may be certified with the operating report required by Condition 34 of this permit. All other reports must be certified upon submittal.

[18 AAC 50.205, 1/18/97]

[18 AAC 50.345(a)(9), 1/18/97]

[18 AAC 50.320(a)(2) & 18 AAC 50.320(a)(2)(E), 1/18/97]

- 29. Submittals.** Unless otherwise directed by the department or this permit, the Permittee shall send reports, compliance certifications, and other documents required by this permit to ADEC, Air Permits Program, 610 University Ave., Fairbanks, AK 99709-3643, ATTN: Compliance Technician.

[18 AAC 50.320(a)(2)(E), 1/18/97]

- 30. Information Requests.** The Permittee shall furnish to the Department, within a reasonable time, any information the Department requests in writing to determine whether cause exists to modify, revoke and reissue, or terminate the permit or to determine compliance with the permit. Upon request, the Permittee shall furnish to the Department copies of records required to be kept by this permit. The Department, in its discretion, will require the Permittee to furnish copies of those records directly to the federal administrator.

[18 AAC 50.200, 1/18/97]

[18 AAC 50.345(a)(8), 1/18/97]

[18 AAC 50.320(a)(2) & 18 AAC 50.320(a)(2)(A-E), 1/18/97]

- 31. Recordkeeping Requirements.** The Permittee shall keep all records required by this permit for at least five years after the date of collection, including

31.1 Copies of all reports and certifications submitted pursuant to this Section of this permit.

31.2 Records of all monitoring required by this permit, and information about the monitoring including

- a. calibration and maintenance records, original strip chart or computer-based recordings for continuous monitoring instrumentation;
- b. sampling dates and times of sampling and measurements;
- c. the operating conditions that existed at the time of sampling or measurement;

- d. the date analyses were performed;
- e. the location where samples were taken;
- f. the company or entity that performed the sampling and analyses;
- g. the analytical techniques or methods used in the analyses; and
- h. the results of the analyses.

[18 AAC 50.320(a)(2)(D), 1/18/97]

- 32. Excess Emission and Permit Deviation Reports.** The Permittee shall report all emissions or operations that exceed or deviate from the requirements of this permit or that present a potential threat to human health or safety as soon as possible, but no later than 48 hours, after the event is discovered. The report must include the information listed on the form contained in Section 16 of this permit. The Permittee may use this form to report emissions under this condition.

[18 AAC 50.235(a)(2) & 18 AAC 50.240(c), 1/18/97]

[18 AAC 50.320(a)(2)(E), 1/18/97]

- 33. NSPS and NESHAP Reports.** The Permittee shall submit to the Department copies of federal reports, as they apply to the facility as follows:

- 33.1 Attach a copy of any NSPS and NESHAP reports submitted to the U.S. Environmental Protection Agency (EPA) Region 10 to the Operating Report required by Condition 34 if a copy has not already been sent to the appropriate Department office.
- 33.2 The Permittee shall notify the Department of any EPA granted waivers of NSPS or NESHAP emission standards, recordkeeping, monitoring, performance testing, or reporting requirements within 30 days after the Permittee receives a waiver if the Department has not already been provided a copy by EPA.

[18 AAC 50.040, 1/18/97]

[Federal Citation 40 C.F.R. 60 & 40 C.F.R. 61, 7/1/97]

- 34. Operating Reports.** During the life of this permit, the Permittee shall submit an original and two copies of an operating report as set out by Permit No. 9473-AA025. This report must include copies of the records required to be reported by the conditions of this permit. In addition, the report must include a listing of all dates of deviations and excess emissions, corresponding with Condition 32, which occurred during the reporting period. If the Permittee is certifying the excess emission and permit deviation report pursuant to Condition 28, then a copy of each excess emission and permit deviation report must be attached to the operating report.

[18 AAC 50.320(a)(2)(A-E), 1/18/97]

**Section 13. Standard Conditions Not Otherwise Included in the Permit**

- 35.** The Permittee must comply with each permit term and condition. Noncompliance constitutes a violation of AS 46.14, 18 AAC 50, and the Clean Air Act, except for those requirements designated as not federally-enforceable, and is grounds for:

35.1 an enforcement action,

35.2 permit termination, revocation and reissuance, or modification in accordance with AS 46.14.280, or

35.3 denial of a construction-permit renewal application.

[18 AAC 50.345(a)(1), 1/18/97]

[18 AAC 50.320(a)(1), 1/18/97]

- 36.** It is not a defense in an enforcement action to claim that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with a permit term or condition.

[18 AAC 50.345(a)(2), 1/18/97]

[18 AAC 50.320(a)(2), 1/18/97]

- 37.** Each permit term and condition is independent of the permit as a whole and remains valid regardless of a challenge to any other part of this permit.

[18 AAC 50.345(a)(3), 1/18/97]

[18 AAC 50.320(a)(2), 1/18/97]

- 38.** Compliance with permit terms and conditions is considered to be compliance with those requirements that are:

38.1 included and specifically identified in the permit, or

38.2 determined in writing in the permit to be inapplicable.

[18 AAC 50.345(a)(4), 1/18/97]

[18 AAC 50.320(a)(2), 1/18/97]

- 39.** The permit may be modified, reopened, revoked and reissued, or terminated for cause. A request by the Permittee for modification, revocation and reissuance, or termination or a notification of planned changes or anticipated noncompliance does not stay any construction permit condition.

[18 AAC 50.345(a)(5), 1/18/97]

[18 AAC 50.320(a-c), 1/18/97]

- 40.** The permit does not convey any property rights of any sort, nor any exclusive privilege.

[18 AAC 50.345(a)(6), 1/18/97]

[18 AAC 50.320(b), 1/18/97]

- 41.** The Permittee shall allow an officer or employee of the Department or an inspector authorized by the Department, upon presentation of credentials and at reasonable times with the consent of the owner or operator, to:
- 41.1 enter upon the premises where a source subject to the construction permit is located or where records required by the permit are kept,
  - 41.2 have access to and copy any records required by the permit,
  - 41.3 inspect any facilities, equipment, practices, or operations regulated by or referenced in the permit, and
  - 41.4 sample or monitor substances or parameters to assure compliance with the permit or other applicable requirements.

[18 AAC 50.345(a)(7), 1/18/97]  
[18 AAC 50.320(a)(2), 1/18/97]

**Section 14. Visible Emissions and Particulate Matter Monitoring Plan****Visible Emissions Observations**

- 42.** The Permittee shall observe visible emissions in the exhaust of each source listed in Table 1 of Section 4 as follows:

- 42.1 For Sources ID No. 4 through 9 burning natural gas fuel: Within 10 days after installation of lean head end liners on both of Sources ID No. 4 and 5, conduct an observation of the exhausts of each unit for the presence or absence of visible emissions, excluding condensed water vapor. The observation of each source shall consist of a visual survey no less than 6 minutes in duration. Record the following information in a written log for each observation:
- a. The date and time of the observation;
  - b. From Table 1 of Section 4 of this permit, the ID of the source observed;
  - c. Whether visible emissions are present or absent in the exhaust;
  - d. If the source starts operation on the day of the observation, the startup time of the source; and
  - e. Name, title, and signature of the person making the observation.
- 42.2 For Sources ID No. 6 through 9 burning diesel fuel and Sources ID No. 21 through 23: Within 12 months after installation of lean head end liners on both of Sources ID No. 4 and 5, observe the exhaust for 15 minutes to obtain 60 individual 15-second readings in accordance with Section 15 of this permit. Conduct subsequent tests no less than every 12 months.

**Corrective Actions Based on Visible Emissions Observations**

- 43.** If visible emissions are present in the exhaust during an observation performed under Condition 42.1 or at any other time, the Permittee shall
- 43.1 If visible emissions persist, take actions to reduce visible emissions from the source within 24 hours of the observation;
  - 43.2 Keep a written record of the starting date, the completion date, and a description of the actions taken to reduce visible emissions;
  - 43.3 After completing the actions taken to reduce visible emissions, immediately upon startup of the source, observe the source exhaust for visible emissions as described under Condition 42.1 a, b, c, d, and e; and

- 43.4 If visible emissions are still present in the exhaust during an observation performed under Condition 43.3, then take action to reduce visible emissions as detailed in Conditions 43.1 and 43.2. Within 14 days after subsequent startup, observe the exhaust for 15 minutes to obtain 60 individual 15-second reading in accordance with Section 15 of this permit.

### Particulate Matter Testing

44. Within 6 months of permit issuance, either provide the Department with a vendor guarantee that the Sources ID Nos. 22 and 23 will meet the grain loading standard or conduct a particulate matter source test as set out in Condition 45.
45. Upon Department request and as required by this permit, the Permittee shall conduct tests to determine the concentration of particulate matter in the exhaust of a source as follows:
- 45.1 Conduct the tests according to the requirements set out in Section 11 of this permit; and
- 45.2 During each test, observe visible emissions in accordance with Section 15 and calculate the average opacity that was measured during the test. Submit the results of the visible emission observations and the calculation with the source test report.

### Reporting Requirements

46. The Permittee is not required to comply with Conditions 24, 25, and 26 while observing visible emissions.
47. For all visible emissions observations taken under Conditions 42.1, 42.2, and 43.4, the Permittee shall submit copies of observation results with the facility report required by Condition 34.
48. For all tests to determine the particulate matter in the exhaust of a source conducted under Condition 44, the Permittee shall report as set out in Section 11.
49. The Permittee shall submit a report in accordance with Condition 32 if:
- 49.1 A visible emission observation results in:
- a. 13 or more 15-seconds readings with an opacity greater than 10%<sup>1</sup> for any of Sources ID No. 4 through 9; or
  - b. 13 or more 15-second readings with an opacity greater than 20% for any of Sources ID No. 21 through 23; and

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<sup>1</sup> Particulate matter best available control technology limit for turbine Sources ID No. 1 through 9 as set out in Permit No. 9473-AA025.

49.2 The results of a test for particulate matter exceed the particulate matter emission limit.

[18 AAC 50.320(a)(2)(A-E), 1/18/97]

## **Section 15. Visible Emission Evaluation Procedures**

An observer qualified according to 40 C.F.R. 60, Reference Method 9 shall use the following procedures to determine the reduction of visibility through the exhaust effluent.

**Position.** The qualified observer shall stand at a distance sufficient to provide a clear view of the emissions with the sun oriented in the 140° sector to his back. Consistent with maintaining the above requirement, the observer shall, as much as possible, make his observations from a position such that his line of vision is approximately perpendicular to the plume direction and, when observing opacity of emissions from rectangular outlets (e.g., roof monitors, open baghouses, noncircular stacks), approximately perpendicular to the longer axis of the outlet. The observer's line of sight should not include more than one plume at a time when multiple stacks are involved, and in any case the observer should make his observations with his line of sight perpendicular to the longer axis of such a set of multiple stacks (e.g., stub stacks on baghouses).

**Field Records.** The observer shall record the name of the plant, emission location, facility type, observer's name and affiliation, and the date on the Visible Emissions Field Data Sheet. The time, estimated distance to the emission location, approximate wind direction, estimated wind speed, description of the sky condition (presence and color of clouds), and plume background are recorded on the sheet at the time opacity readings are initiated and completed.

**Observations.** Opacity observations shall be made at the point of greatest opacity in that portion of the plume where condensed water vapor is not present. The observer shall not look continuously at the plume but instead shall observe the plume momentarily at 15-second intervals. Unless directed to do otherwise in this permit, observe emissions for no less than 15 consecutive minutes to obtain a minimum of 60 observations.

**Attached Steam Plumes.** When condensed water vapor is present within the plume as it emerges from the emission outlet, opacity observations shall be made beyond the point in the plume at which condensed water vapor is no longer visible. The observer shall record the approximate distance from the emission outlet to the point in the plume at which the observations are made.

**Detached Steam Plume.** When water vapor in the plume condenses and becomes visible at a distinct distance from the emission outlet, the opacity of emissions should be evaluated at the emission outlet prior to the condensation of water vapor and the formation of the steam plume.

**Recording Observations.** Opacity observations shall be recorded to the nearest 5 percent at 15-second intervals on the Visible Emissions Observation Record contained in this section. Record the minimum number of observations required by the permit. Each momentary observation recorded shall be deemed to represent the average opacity of emissions for a 15-second period.

**Data Reduction.** To determine compliance with the standards set out in Condition 14 of this permit, count the number of observations that exceed the percent opacity limits and record this number on the sheet.



## Visible Emissions Field Data Sheet

Certified Observer: \_\_\_\_\_

Company: \_\_\_\_\_

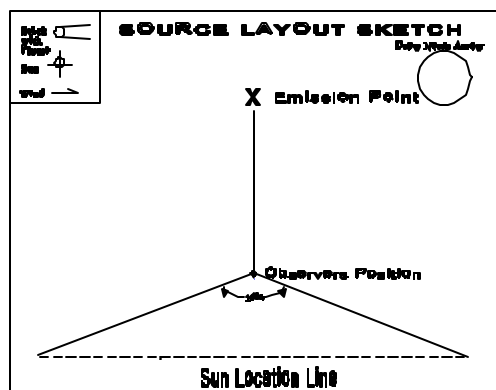
Location: \_\_\_\_\_

Test No.: \_\_\_\_\_ Date: \_\_\_\_\_

Source: \_\_\_\_\_

Production Rate, Operating Rate &  
Unit Operating Hours: \_\_\_\_\_

Hrs. of observation: \_\_\_\_\_



Clock Time	Initial				Final
Observer location					
Distance to discharge					
Direction from discharge					
Height of observer point					
Background description					
Weather conditions					
Wind Direction					
Wind speed					
Ambient Temperature					
Relative humidity					
Sky conditions: (clear, overcast, % clouds, etc.)					
Plume description:					
Color					
Distance visible					
Water droplet plume? (attached or detached?)					
Other information					

## Visible Emissions Observation Record

Page \_\_\_\_ of \_\_\_\_

Company \_\_\_\_\_ Certified Observer \_\_\_\_\_

Test Number \_\_\_\_\_ Clock time \_\_\_\_\_

[illegible]

Additional information:

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Observer Signature

### Data Reduction:

Duration of Observation Period (minutes) \_\_\_\_\_

Number of Observations \_\_\_\_\_

Number of Observations exceeding limits \_\_\_\_\_

### Average Opacity Summary

Set Number	Time Start—End	Opacity	
		Sum	Average

**Section 16. ADEC Notification Form**

Fax this form to: (907) 269-7508 Telephone: (907) 269-8888

**BP Exploration (Alaska), Inc.**

Company Name

**Lisburne Production Center**

Facility Name

**1. Reason for notification:**☐ Excess Emission ☐ Permit Condition Exceedence**2. Event Information (Use 24-hour clock):**

	START Time:	END Time:	Duration (hr:min):
Date: _____	_____:	_____:	_____:
Date: _____	_____:	_____:	_____:
	<b>Total:</b> _____:		

**3. Cause of Event (Check all that apply):**

<input type="checkbox"/> START UP	<input type="checkbox"/> UPSET CONDITION	<input type="checkbox"/> CONTROL EQUIPMENT
<input type="checkbox"/> SHUT DOWN	<input type="checkbox"/> SCHEDULED MAINTENANCE	<input type="checkbox"/> OTHER _____

Attach a detailed description of what happened, including the parameters or operating conditions exceeded.

**4. Sources Involved:**

Identify each Emission Source involved in the event, using the same identification number and name as in the Permit. List any Control Device or Monitoring System affected by the event. Attach additional sheets as necessary.

Source ID No.	Source Name	Description	Control Device
_____	_____	_____	_____
_____	_____	_____	_____

**5. Emission Limit and/or Permit Condition Exceeded:**

Identify each Emission Standard and Permit Condition suspected of being exceeded during the event. Attach a list of ALL known or suspected injuries or health impacts. Attach additional sheets as necessary.

Permit Condition	Limit	Exceedence
_____	_____	_____
_____	_____	_____

**6. Emission Reduction:**

Attach a detailed description of ALL of the measures taken to minimize and/or control emissions during the event.

**7. Corrective Actions:**

Attach a detailed description of ALL corrective actions taken to restore the system to normal operation.

Based on information and belief formed after reasonable inquiry, I certify that the statements and information in and attached to this document are true, accurate, and complete.

Printed Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

**Section 17. Permit Documentation**

May 21, 1997	Letter from Woodward-Clyde to ADEC submitting modeling protocol for ARCO Lisburne modification project.
July 23, 1997	Letter from Woodward-Clyde to ADEC submitting processed meteorological data.
October 4, 1999	Letter from ARCO to ADEC requesting a modification to the ARCO Lisburne Permit No. 9473-AA025.
January 10, 2000	Letter from ARCO to ADEC submitting information to supplement the request for modification mailed October 4, 1999.
January 10, 2000	Letter from ADEC to ARCO requesting information on draft modeling analysis.
March 31, 2000	Letter from ARCO to ADEC submitting information in support of construction permit application.
March 31, 2000	Letter from Secor to ADEC submitting archived modeling files used in support of ARCO Lisburne modification application.
April 24, 2000	Letter from Secor to ADEC submitting a response to ADEC comments on model outputs.
July 12, 2000	Letter from Secor to ADEC submitting a revised modeling analysis for the Lisburne modification.
October 30, 2000	BPXA email response to the Department's application comments.
November 9, 2000	Preliminary Permit Decision from ADEC to BPXA.
December 12, 2000	Letter from BPXA to ADEC commenting on preliminary permit decision.
January 30, 2001	Draft Final Consistency Determination from ADEC to BPXA.
February 5, 2001	BPXA letter to ADEC requesting an extension to the final consistency determination.
February 16, 2001	Revised Draft Final Consistency Determination from ADEC to BPXA.